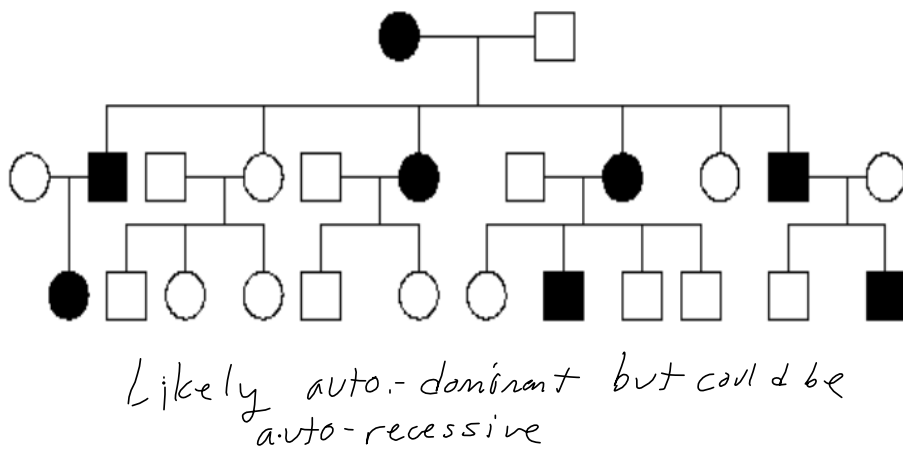
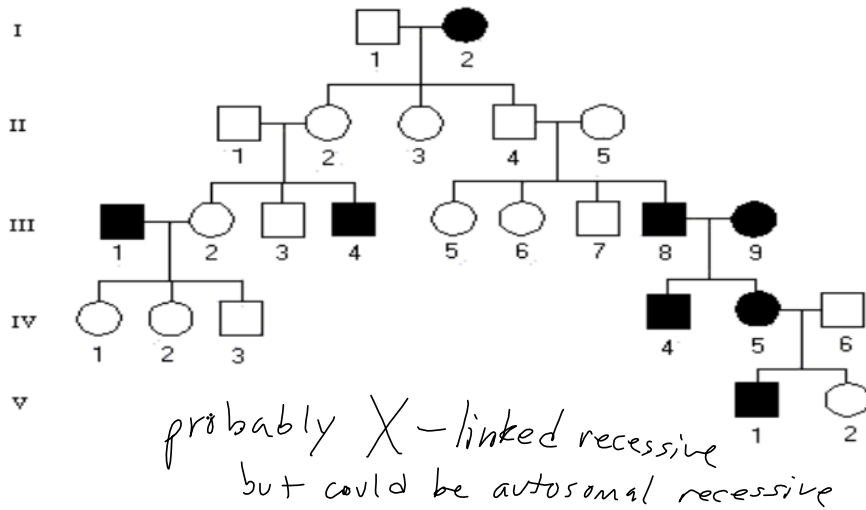
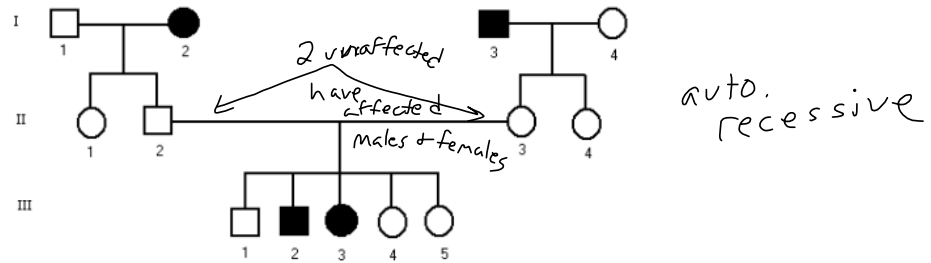


Dominant gene action: affected individuals have at least one affected parent, the phenotype generally appears every generation, two unaffected parents only have unaffected offspring.

X-linked recessive: Will show clusters of affected males (each brother will have a 50% chance of being affected) connected through unaffected carrier females. There will be *no cases of direct male to male transmission* because males transmit their X chromosomes to their daughters and not to their sons.

The image contains three pedigree charts illustrating different inheritance patterns:

- Top Left (Autosomal Recessive):** Shows a family with an unaffected male (I-1) and an unaffected female (I-2). They have three children: an affected male (II-1), an affected female (II-2), and an unaffected male (II-3). The affected individuals are labeled with genotypes X^1Y and X^1X^1 . A note says "unaffected, autosomal simple recessive". A legend indicates that a circle with a dot represents an affected female and a square with a dot represents an affected male.
- Top Right (Autosomal Dominant):** Shows a family with an unaffected male (I-1) and an affected female (I-2). They have three children: an unaffected male (II-1), an affected male (II-2), and an unaffected male (II-3). The affected individuals are labeled with genotypes X^1X^1 and X^1X^1 . A note says "auto. dominant but could be auto. recessive".
- Bottom (X-linked):** Shows a family with an unaffected male (I-1) and an unaffected female (I-2). They have eight children: four affected males (II-1, II-2, II-3, II-4) and four unaffected females (II-5, II-6, II-7, II-8). The affected individuals are labeled with genotypes X^1Y and X^1X^1 .



Incomplete Dominance

R = Red W = White
Both dominant
Together form blend

	RR	
W	RW	RW
W	RW	RW

RR = Red
WW = White
RW = Pink

	RW (pink)	
(pink) R	RR	RW
W	RW	WW

1/4 Red 2/4 Pink
1/4 White

(1 : 2 : 1)
R P W

Codominance

R = Red W = White
Both dominant,
both appear

	RR	
W	RW	RW
W	RW	RW

RR = Red
WW = White
RW = Red + White

Red/White RW Red/White

R	RR	RW
W	RW	WW

1/4 Red 2/4 Red + White
1/4 White
(1 : 2 : 1)
R : RW : W

Multiple Alleles $I^B i$

3⁺ alleles

$A = I^A$ $B = I^B$ $O = i$

A + B codominant
 i recessive to both

AA = "A" Blood | AO = "A" Blood

BB = "B" Blood | BO = "B" Blood

AB = "AB" Blood

AB receive
from OO, BB, AA
or AB, BB, OA

B receive from
BB, OO, BO

A receive from
AO, AA, OO

O - receive only
from OO

AB - donate only to
AB

B - donate to AB
BO or BB

A - donate to AB
AO or AA

O - donate to All

	BA	
B	BB	BA
O	BO	AO

1 : 1 : 1 : 1

	OO	
A	AO	AO
O	OO	OO

1 : 1

	AB	
A	AA	AB
B	AB	BB

1 : 2 : 1

~~ABO~~ ABO
pairs only.

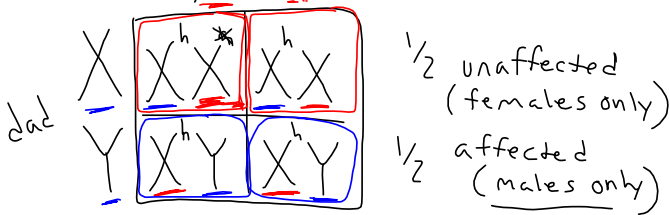
X-linked - only on X chromosome

$\frac{XY}{\text{only 1 X}}$
males

$\frac{XX}{2 X's}$
females

$X^h X^h$ mom

h = recessive disorder (hemophilia)



Sons only inherit X-disorders from MOTHERS

Distinct differences between Males & Females seen

affected H = dominant disorder

